

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-11 cancelled.

12. A method for preparing 2-hydroxy-1-{4-[4-(2-hydroxy-2-methyl-propionyl)-phenoxy]-phenyl}-2-methyl-propan-1-one comprising the steps of:

a) reacting diphenylether with an acylating agent by means of a Friedel-Crafts reaction catalyzed by a Lewis acid to produce a reaction product; and

b) reacting the reaction product with a hydrated base, at a temperature of from about 10°C to about 50°C to produce 2-hydroxy-1-{4-[4-(2-hydroxy-2-methyl-propionyl)-phenoxy]-phenyl}-2-methyl-propan-1-one;

wherein the acylating agent is selected from the group consisting of alpha-bromoisobutyryl bromide, alpha-chloroisobutyryl chloride, and mixtures thereof.

13. The method of Claim 12 wherein the reaction of steps a) or b) takes place in a solvent.

14. The method of Claim 13 further comprising recovering the 2-hydroxy-1-{4-[4-(2-hydroxy-2-methyl-propionyl)-phenoxy]-phenyl}-2-methyl-propan-1-one as a white powder.

15. The method of Claim 14 wherein the 2-hydroxy-1-{4-[4-(2-hydroxy-2-methyl-propionyl)-phenoxy]-phenyl}-2-methyl-propan-1-one is recovered by a method comprising crystallization.

16. The method of Claim 15 wherein the Friedel-Crafts reaction of step a) is performed by:

i) preparing a solution of the acylating agent and the diphenylether in dichloromethane, at a molar ratio of acylating agent to diphenylether of from 2.0 to 2.2, and

then adding the Lewis acid in increments to the solution to form a reaction mixture and maintaining the temperature of the reaction mixture at from about -20°C to about 20°C;

- ii) quenching the Friedel-Crafts reaction by pouring the reaction mixture into a dilute acidic water solution, separating the resultant phases into an aqueous phase and an organic phase and washing the organic phase with water or brine; and
- iii) evaporating the dichloromethane in the organic phase to form an intermediate product and then dissolving the intermediate product in a water soluble aliphatic alcohol to form the reaction product.

17. The method of Claim 16 wherein the aliphatic alcohol is isopropanol.

18. The method of Claim 16 wherein the Lewis acid is AlCl₃.

19. The method of Claim 17 wherein step b) is performed at a temperature of from about 15°C to about 40°C.

20. The method of Claim 19 wherein the hydrated base is an aqueous NaOH solution and the admixture of the hydrated base and the reaction product forms a product liquor.

21. The method of Claim 20 wherein the concentration of NaOH in the aqueous NaOH solution is from about 20 to about 50 percent.

22. The method of Claim 20 wherein the crystallization is performed by adding water to the product liquor at a ratio of from about 0.5 to about 2.0 parts by weight of water for every weight part of isopropanol, to form an isopropanol, final product, and water solution.

23. The method of Claim 22 further comprising cooling the isopropanol, final product, and water solution to from about 0° to about 10°C; and collecting 2-hydroxy-1-{4-[4-(2-hydroxy-2-methyl-propionyl)-phenoxy]-phenyl}-2-methyl-propan-1-one by filtration in the form of a filtrate and drying the filtrate at from about 20° to about 60°C.

24. The method of Claim 11 wherein the Friedel-Crafts reaction of step a) is performed by:

- i) preparing a solution of the acylating agent and the diphenylether in dichloromethane, at a molar ratio of acylating agent to diphenylether of from 2.0 to 2.2, and then adding the Lewis acid in increments to the solution to form a reaction mixture and maintaining the temperature of the reaction mixture at from about -20°C to about 20°C;
- ii) quenching the Friedel-Crafts reaction by pouring the reaction mixture into a dilute acidic water solution, separating the resultant phases into an aqueous phase and an organic phase, and then washing the organic phase with water or brine to form a biphasic admixture; and
- iii. adding a phase transfer catalyst to the biphasic admixture.

25. The method of Claim 24 further comprising using the biphasic admixture as the reaction product in step b) and then recovering the 2-hydroxy-1-{4-[4-(2-hydroxy-2-methyl-propionyl)-phenoxy]-phenyl}-2-methyl-propan-1-one by a method comprising crystallization wherein the crystallization is performed by partial distillation of the dichloromethane from the biphasic mixture and then cooling the biphasic mixture; or through partial evaporation of the dichloromethane from the biphasic admixture and then dilution of the biphasic admixture with lipophilic solvents.

26. A white solid photoinitiator composition comprising 2-hydroxy-1-{4-[4-(2-hydroxy-2-methyl-propionyl)-phenoxy]-phenyl}-2-methyl-propan-1-one wherein the 2-hydroxy-1-{4-[4-(2-hydroxy-2-methyl-propionyl)-phenoxy]-phenyl}-2-methyl-propan-1-one is a powder having a melting point of from 96° to 99°C.

27. A photo-crosslinkable system comprising the product of dissolving the white solid photoinitiator composition of Claim 26 in at least one ethylenically unsaturated monomer and/or ethylenically unsaturated oligomer at a temperature of from about 20° to about 60°C.

28. The while photo-crosslinkable system of Claim 27 wherein the composition of Claim 15 is present at a concentration of from about 0.01 to about 20 percent by weight.

29. The photo-crosslinkable system of Claim 28 wherein the composition of Claim 15 is present at a concentration of from about 0.5 to about 5 percent by weight.
30. A method for coating a substrate comprising applying the photo-crosslinkable system of Claim 27 to a substrate and photo-polymerizing the photo-crosslinkable system with a light source, the light source having emission bands in the UV-visible region.
31. The method of Claim 30 wherein the substrate is selected from the group consisting of wood, paper, cardboard, plastic, metal and mixtures thereof.